



Institute for Advanced Technology

MANAGEMENT SCIENCE SEMINARS

EXECUTIVE CONFERENCES

COMPUTER WORKSHOPS

TECHNICAL TRAINING COURSES

IN-PLANT EDUCATION PROGRAMS

MONDAY MORNING MANAGEMENT CLINICS



C-E-I-R INC.



Today's economy fattens on the throw-away, grows through swift discard of the obsolete. Now we reach the point at which obsolescence and discard are expressed in human terms.

At yesterday's slower pace, machines wore out and old men retired. Today, accelerated by automation, computers and the technological explosion, replacement comes faster.

The white collar man is now coming to be viewed as a link in a management information system. Indeed, the most apt phrase for the process that is radically altering traditional views of jobs and of organization is the label, "Information Revolution."

In the midst of this revolution, many of the young, and more of those now employed, are learning or exercising vocational skills that are already outmoded.

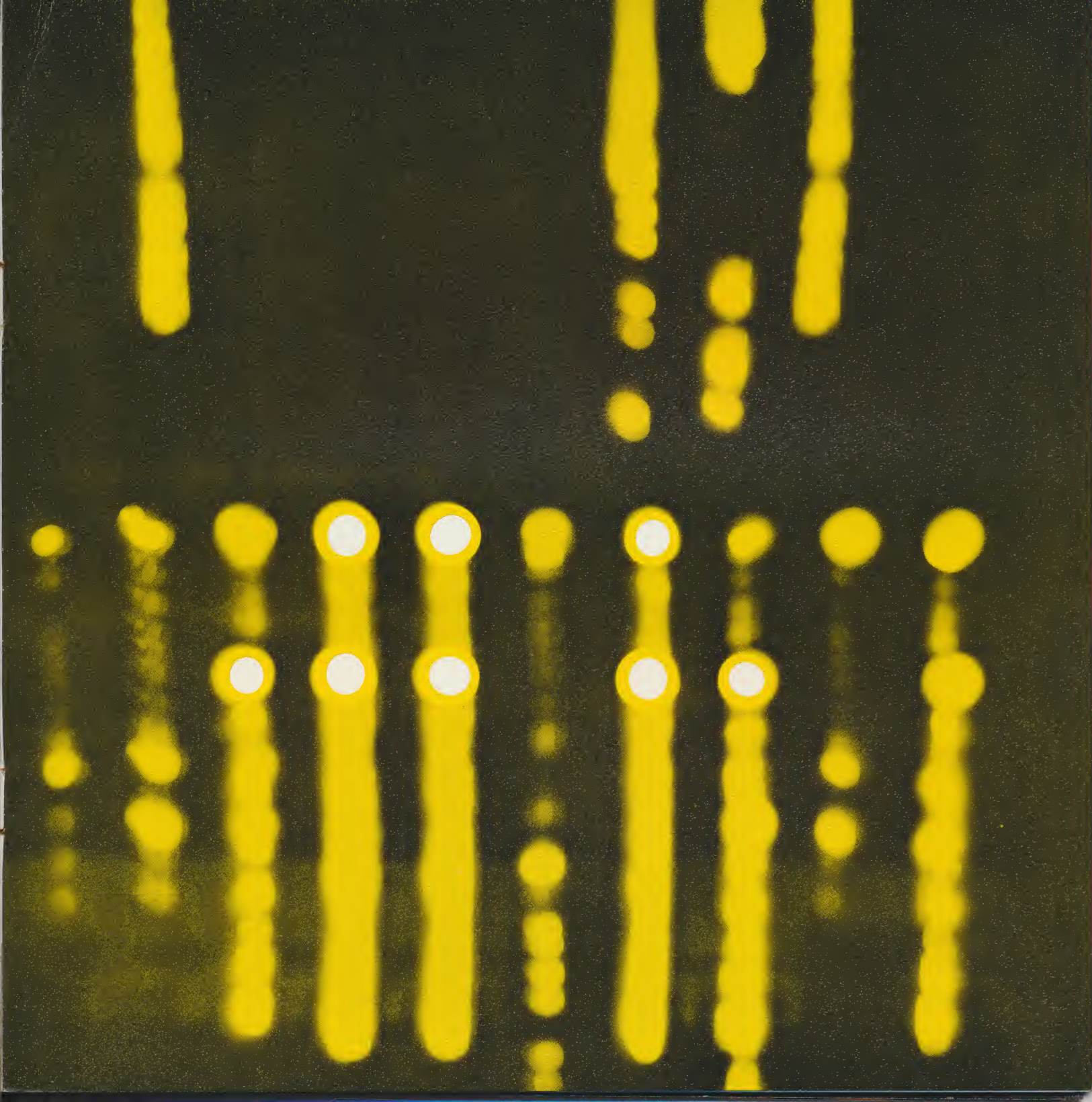
While the electronic computer is both catalytic agent and symbol of the new age, it is far from alone at the center stage of the day. Other powerful forces also move our times, and among them is the ironic population explosion that occurs at a time when automation exerts pressure on our ability to create new jobs.

The force of the Information Revolution is such that it requires massive social and personal adaptations. It is not surprising, then, that those who concern themselves with the impact of progress on people often view added education as the essential prerequisite to our continued national well-being.

But education, too, has been changed by the new technology. Even the staples of the elementary grades—reading and writing, history and arithmetic—have felt the impact of technological change. Never again will a Euclid design a geometry that will endure for two thousand years.

The products of research and development cannonade the classroom with a ceaseless barrage of new data. Events move with such speed that, particularly in the sciences most important to today's vocations, the long lead time generally required for the introduction of new concepts and new methods into the classroom presents serious, sometimes insurmountable, problems.

We have generally considered education as a one-time process. For centuries our society has efficiently processed its young in a relatively brief educational experience which, once completed, fitted them for the half century in which they made their contribution to society.



The accelerated change associated with the Information Revolution upsets that traditional view. It creates new conditions in which continuing education is required, particularly for the many individuals in business management who are extremely vulnerable to technological innovation and, at the same time, are the forgotten men of social planning.

The future, and not a very distant one, appears surely to hold little hope for the economic survival of either the individuals or the organizations that fail to interest themselves in and apply the new concepts and the new technology associated with the Information Revolution.

These conditions are particularly cogent arguments, not only for continual technical training for the white collar man, but for training outside the normal academic setting—indeed for training outside any institution in which the teaching is from what we may term “historical” materials, and which is conducted by either retired practitioners or by persons whose experience is only theoretical. What is required is instruction provided by an organization made up of distinguished *do-ers* who are periodically made available to serve in a teaching capacity. Under today's conditions, those with experience in the practical use of today's advanced skills can do a service by teaching what they know. The throttle of change is jammed at “Ahead, Full.” Within the past two decades the word, “new,” once heard distinctly and at intervals, has come to sound like the whistle on the night train of transition, no longer something spoken and sensed in isolation, but, like that whistle, a continuing sound. The man in the white collar can hear it approach; he can hear it at full decibel as it meets him; and he may be fated to stand idly by the roadbed, sensing its fading, diminishing presence.

It may be that the Information Revolution is only the prelude to an abundant future, a Utopian society. Today, man's skill at endowing his machines with elements of the human sensory apparatus, intellectual capability and adroitness of manipulation, lends credence to the idea that such a Utopia may be in man's fate. But our return to Eden is no certainty, while today's period of transition, already hard upon us, is sure to create immeasurable disruptions in the lives of the individuals who are living through it.

Individual men are harvested annually in the rites of passage of university and school of experience. As such, each is identified with a date; a year that, like a wine's vintage, identified him for time to come. We say that so-and-so graduated from State in this year, or that he worked with such-and-such during some time of adventure or discovery. But accelerated change has brought to such dates, which are construed as in some way terminal in a man's intellectual or technical development, an onus which is, in time, devastating in a personnel appraisal—although they may seem compellingly desirable today.

As a vintage wine will become vinegar in time, so may the intellectual and technical qualifications of a manager lose their savor and their appropriateness.

The engine of change has, since memory, served to execute society's requirement that age be honored, within tolerance, and that youth be served, within limits. Men have had their half century. But today the swiftness of change—embedded in technology, borne on the shoulders of bursting population, and nurtured by expanding longevity—telescopes the utility of the vintage man.

The future, then, lies with him who can become, if not a man for all ages, then at least a man for this man-consuming age. It lies with the individual whose intellectual prowess and whose technological capabilities are never vintage (except that they are tested) but always new wine. Such a man is not a vain sketch or unrealistic vision. He is the man of today, the man whom society, the engineer at the throttle of time's engine, demands. He is the man who, like students in all times, regards yesterday only as an instructive tool for the conquest of the white and distant slopes of today and tomorrow.

Such a man is an eternal student.

Such is the thinking behind the formation of the Institute for Advanced Technology by C-E-I-R, Inc., an organization whose ranks include many distinguished do-ers and whose field of endeavor keeps it at the forefront of the Information Revolution. Like many other firms associated with management sciences and computer operations, C-E-I-R has engaged periodically in training programs conducted either through simple marketplace necessity or because it has been retained to present specialized training sessions.

The company was founded by Dr. Herbert W. Robinson in 1954, and is today a recognized leader in such fields as mathematics, statistics, economics, management science, business administration, operations research and computer science. Several hundred specialists in these fields are on the company's professional staff; and, in addition, scores of the nation's finest scientific and professional minds are retained as C-E-I-R consultants. This professional capability is augmented by a thirty million dollar investment in the most modern electronic computing equipment now available, and by computer specialists—systems analysts, programmers, computer operators and other personnel—skilled in the application of this computational power.

C-E-I-R professionals are no strangers to the field of education. They retain close ties to academic life through previous experience; many are drawn from academic circles; an unusually high proportion of them have advanced degrees, and a good number serve as part-time lecturers, or on the editorial boards of scholarly magazines. Technical papers, articles and books emanating from their ranks are widely read in academic circles.

The effect of practical application of advanced techniques by these men has been felt in innumerable areas. In Central America, members of a sugar growers' cooperative get their crops to market more economically as the result of a C-E-I-R transit optimization study... In Washington, foreign policy planners were better armed to steer our relations with the U.S.S.R. through studies of the Russian economy made by C-E-I-R... In the Eastern United States, reinforced concrete buildings are erected more economically as the result of automated steel detailing at C-E-I-R... The corner grocer sees fewer spoiling bananas today because of a C-E-I-R study that permits his supplier to cull out potential rotters before they are shipped... The U.S. Soil Conservation Service is able to quickly and economically locate the areas of a watershed most likely to flood through a C-E-I-R simulation program... Viewers of network election coverage have, since 1960, received prompt and accurate computer projections of election winners as a result of C-E-I-R programs developed for major television networks... Buyers of feed mixes for livestock do so more economically because of a program developed by C-E-I-R to permit the manufacturer to adjust the feed blend to market conditions without sacrificing nutritional value... Through



hundreds of such widely varied projects C-E-I-R has, in the ten short years of its existence, generated answers for business, science and government that affect virtually every phase of our national life.

The program offered by the Institute for Advanced Technology is made up of courses in the practical application of the management and technical skills exercised in real problem solving situations by C-E-I-R staff members.

IAT seminars, conducted for two, three, or four days, are generally organized as lecture-workshop sessions. Senior professional staff members of C-E-I-R, Inc., form the basis of the Institute's seminar faculty, with guest lecturers from industry, government and universities participating from time to time.

The seminars described in the Institute's catalog fall into two major categories. First are those which survey the major elements of current technology and relate them to enterprise management. Second is the group of seminars that update the technical specialist in his specialty by exposing him to the latest applications of techniques in dynamic, practical situations similar to his own working environment. In each category, top-level enterprise objectives dictate the objectives of specific courses, thereby maintaining the perspective by which both the specialist and the executive is guided in his daily professional life. In addition to the seminar program, a permanent campus will soon be established to provide a setting for training in subjects that require more time than is available in the seminar program, and to make available some of the machine facilities necessary for instruction in a variety of scientific and business computer subjects.

Overall, the educational effort is geared to provide specialized help for management people seeking to implement new tools and techniques of automation, training for young people beginning their careers, and retraining for those who find their occupational skills are no longer marketable. Today's wage earner, whether his collar be white or blue, must be educated to embrace these new concepts rather than fear them. In no other way is it possible for him to view the exciting new horizons opened up by the new technology in almost every aspect of human endeavor.

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